Question 1.2: Identify the parameters and their values you must use if you want to obtain year-over-year real GDP percentage changes (i.e. percent change from year ago values).

Hint: You can look up the `series_id` of real GDP by searching it on Fred's website. It should be listed in parentheses next to the name of the series.

"real_time_start", "real_time_end", "data", and "value"

Question 3.5: Comment on the results shown above. Do these results match your expectations? In addition, do you think there is a potential problem related to outliers? If so, what is a good way to mitigate this problem?

This does match my expetations, esspecially in the cs and engineering realm. Although engineering majors have been popular for decades, the amount of growth in these areas and shrinkage in others, such as actuarial science and natural sciences makes sense. As for outliers, there could be potential for outliers, or change of major name. Maybe actuarial sciences is grouped with business or economics majors at many universities. A good way to mitigate this would be to collect more data on if this is true and then reclassify.

Question 4.2: Plot the 25th, 50th, 75th, 90th percentile wages and salaries for Economics majors at each age.

Hint: You will need to use groupby on `AGE`. Remember to reset index after groupby and aggregate.

```
In [ ]: percentiles = [25, 50, 75, 90]

        plt.figure(figsize=(9, 6))
        for p in percentiles:
            ipums_s_2019_econ_p_by_age = ...
            plt.plot(..., label=f"Econ {p}th Percentile")
        plt.title("Percentile Wage and Salaries By Age for Economics Majors in 2019")
        plt.xlabel("Age")
        plt.legend();
```

Question 4.3: Filter the `ipums_s` dataframe for CS majors based on the criteria above. We only need records for 2019. Then plot the 25th, 50th, 75th, 90th percentile wage and salary for CS majors of each age.

```
In [ ]:  ...
         plt.title("Percentile Wage and Salaries By Age for CS Majors in 2019")
         plt.xlabel("Age")
         plt.legend();
```

Question 4.4: Plot the lifecycle wage and salaries of Economics and CS majors together.

Hint: You only need to copy and paste in the code in the for loop.

```
In [ ]: colors = ['sandybrown', 'coral', 'chocolate', 'sienna', 'cornflowerblue', 'royalblue', 'mediumbl
        plt.figure(figsize=(12, 8))

        percentiles = [25, 50, 75, 90]
        # Economics majors
        for i, p in enumerate(percentiles):
            ...
            plt.plot(..., label=f"Econ {p}th Percentile", color=colors[i])

        # CS majors
        for i, p in enumerate(percentiles):
            ...
            plt.plot(..., label=f"CS {p}th Percentile", color=colors[i+len(percentiles)])
        plt.title("Percentile Wage and Salaries By Age in 2019 (Economics vs Computer Science)")
        plt.xlabel("Age")
        plt.legend();
```